021213-00114838 Jacob Schou-Nielsen

To: operations@torm.com
From: Torm Bunkers
Subject: Fwd: OK - ALL ON SPEC - TORM KANSAS 24/11/2013 - SUBMITTED TEST RESULTS
Categories: Torm Kansas
Date: 02/12/2013 15:54 (printed 02/12/2013 15:57)

Lintec Testing Services Limited

Sample information collated from Vessel 's Bunker Data form and sample bottle label.

Fuel Quality Report - SUBMITTED

Sample No.	DL209136
TEST SPEC.	MET
Vessel	TORM KANSAS
Client	Torm Tech Div Cph
Act Bunker Date	24/11/2013
Bunker Port	CAPE TOWN
Quantity Del.	530 M.T.
Grade Ordered	RMF180
Bunker Supplier	BP SOUTHERN AFRICA
Barge	NOT STATED
Sample Location	SHIP'S BUNKER LINE
Supplier's Specs:	Density - @15=983.3
	Viscosity - @50=155.0
	Sulphur - 2.56%

Received at Lab	27/11/2013 at 11:35 Hrs
Courier Ref	9010416855
DHL PAD Used	Yes
Lintec Sample Seal	0895654
Supplier Sample Seal	0895687
Vessel Sample Seal	0895653
Marpol Sample Seal	0273754

TEST	METHOD	UNITS	RESULT	SPEC
DENSITY	ISO 12185	kg/m³@15°	989.1	991 MAX
VISCOSITY	ISO 3104	CST@50°C	160.0	180 MAX
VISCOSITY	ISO 3104	CST@80°C	40.3	-
WATER	ISO 3733	%VOL	0.20	0.5 MAX
MCRT	ISO 10370	%MASS	17.6	20 MAX
SULPHUR	ISO 8754	%MASS	2.62	3.50 MAX
SED, POT	ISO 10307-2	% (m/m)	0.01	0.10 MAX
ASH	ISO 6245	%MASS	0.04	0.10 MAX
COMPAT	ASTM 4740	SPOT#	1	2 MAX
VANADIUM	ISO 10478MOD	mg / kg	45	500 MAX
SODIUM	ISO 10478MOD	mg / kg	24	100 MAX
ALUMINIUM	ISO 10478	mg / kg	23	-
SILICON	ISO 10478	mg / kg	23	-
IRON	ISO 10478MOD	mg / kg	23	-
NICKEL	ISO 10478MOD	mg / kg	26	-
CALCIUM	ISO 10478MOD	mg / kg	8	-
MAGNESIUM	ISO 10478MOD	mg / kg	< 1	-
LEAD	ISO 10478MOD	mg / kg	< 1	-
ZINC	ISO 10478MOD	mg / kg	2	-
POUR POINT	ISO 3016	°C	<-12	30 MAX
FLASH POINT	ISO 2719	°C	>70.0	60 MIN
CALCULATED VALUES			-	
NET CAL VAL	ISO 8217:A	MJ/KG	40.22	-

CCAI	ISO 8217:B	INDEX#	860	-
AL + SI CAL	ISO 10478	mg / kg	46	80 MAX
OPERATIONAL ADVICE			-	
INJECTION TEMP		@10CST	129	°C
INJECTION TEMP		@15CST	113	°C
MINIMUM PUMP		@1000CST	19	°C
TOTAL ACID NUMBER	ASTM 664	mg/g	<0.20	3.0 MAX
OPERATIONAL ADVICE			-	-
CHEMICAL CONTAMINA	LINMS	-	GREEN	NO ACTION
PHOSPHOROUS	ISO 10478MOD	mg / kg	2	-

ONBOARD FUEL BLENDING IS NOT RECOMMENDED

*Refer to your engine manufacturer's for max/min alarm settings

Spec. density:	991.0	@15C	Spec. viscosity:	180.0	@50C
Supplier density:	983.3	@15C	Supplier viscosity:	155.0	@50C
Sample density:	989.1	@15C	Sample viscosity:	160.0	@50C

Spec. sulphur: 3.50%
Supplier sulphur: 2.56%
Sample sulphur: 2.62%

Lab Technician : Mark Hancock

Sample results are compared with the spec, RMF180

The above analysis was carried out on a sample supplied by your vessel's Chief Engineer in accordance with the Bunker Data Form returned to us. The sample bottle was sealed on arrival. The seal was broken to allow the analysis to be carried out.

ENGINEERING NOTES:

Based upon the analytical results measured in this sample these indicate that your listed specification parameters requirements are met on this occasion.

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* HAVE YOU GOT ENOUGH SAMPLE BOTTLES?
* IF NOT, SEE YOUR INSTRUCTION FOLDER FOR SUPPLY DETAILS.
* ALTERNATIVELY CONTACT THE LINTEC LOGISTICS DEPARTMENT AT testing@lintec-group.com OR CALL 0044 1325 390180.

Sample Reports prepared by Narinder Singh / Lintec Testing Services Limited.
SHOULD YOU WISH TO DISCUSS THIS TEST REPORT OR ANY OTHER TECHNICAL ISSUE PLEASE CONTACT OUR RESULTS DEPARTMENT AT results@lintec-group.com OR CALL 0044 1325 390183.

Signed: Mark Hancock Report Date: 27/11/2013
on behalf of Lintec Testing Services Ltd.

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